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Feature Article - Analytical Living Cost Indexes for Selected Australian Household Types: An Update

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SUMMARY

This article updates the analytical living cost indexes for selected Australian households published in Australian Economic Indicators (AEI)¹ in June 2001. These price indexes are designed specifically to measure the impact of changes in prices on the out-of-pocket living costs experienced by four categories of Australian households. The indexes now cover the period from June quarter 1998 up to and including the June quarter 2002 and incorporate minor revisions to previously published data.

Using the principal source of household income to categorise households, the four household types for which these indexes have been constructed are: Employee households, Age pensioner households, Other government transfer recipient households, and Self-funded retiree households.

These indexes represent the conceptually preferred measures for assessing the impact of changes in prices on the disposable incomes of households. In other words, these indexes are particularly suited for assessing whether the disposable incomes of households have kept pace with price changes or not. The Australian Consumer Price Index (CPI), on the other hand, is designed specifically to measure price inflation for the household sector as a whole and, as such, is not the conceptually ideal measure for assessing the impact of price changes on the disposable incomes of households².

Over the four years covered by these indexes, changes in living costs ranged from a low of 12.4% (experienced by Employee households) to a high of 14.0% (experienced by Age pensioner households). Over the same period the CPI rose by 13.7%.

THE HOUSEHOLD TYPES AND THEIR EXPENDITURE PATTERNS

The analytical living cost indexes for employee households, age pensioner households and self-funded retirees have been revised slightly for the period June quarter 1999 to December quarter 2000. These revisions (of up to 0.2%) result from errors in the compilation of average weekly income and expenditure estimates for these household types. The expenditure data for self-funded retiree households were most affected by the revisions with the number of such households increasing (from 318,100 to 361,100) and average weekly expenditure decreasing (from \$641 to \$564).

Although the indexes are constructed using weights from both the 1993-94 and 1998-99 Household Expenditure Surveys (HES), the discussion of weights in this article is restricted to those obtained from the latter HES (that is, the weights used from June quarter 2000).

The estimated number of households by household type and their relative significance, based on the revised 1998-99 HES, is shown in table 1.

TABLE 1: HOUSEHOLD TYPES

Household type	Households	
	'000	% of total
Employee	4,042.0	56.7
Age pensioner	1,035.4	14.5
Other government transfer recipient	958.1	13.5
Self-funded retiree	361.1	5.1
Other households(a)	726.3	10.2
Total	7,122.8	100.0

(a) Includes self employed, income indeterminate and parent supported students.

Source: Household Expenditure Survey, 1998-99.

Table 2 shows per household average weekly expenditure during 1998-99 for each of the four household types, at June quarter 2000 prices. The commodity grouping used corresponds to the commodity groups used for the current (14th series) CPI.

Table 2 illustrates significant differences in expenditures, both in total and at the individual commodity group level. Although differences in incomes are likely to be a major reason, other factors such as the demographic make-up of the households and dwelling tenure would also play a part. For example, Age pensioner households have on average the lowest number of persons per household, being mostly one or two person households without children, while Employee and Other government transfer recipient households are more likely to include dependent children. In addition, the higher rate of outright home ownership among certain household types, such as Self-funded retiree and Age pensioner households, would also influence the nature of expenditures.

TABLE 2: ESTIMATED AVERAGE WEEKLY EXPENDITURE DURING 1998-99 BY COMMODITY GROUP AND HOUSEHOLD TYPE AT JUNE QUARTER 2000 PRICES

Commodity group	Household type			
	Employee households	Age pensioner households	Other government transfer recipient	Self-funded retiree households
Average weekly expenditure per household (\$)				
Food	155.16	71.68	92.31	96.53
Alcohol and tobacco	74.32	21.96	38.82	34.92
Clothing and footwear	46.91	14.04	17.83	23.62
Housing	96.29	49.37	88.27	61.00
Household furnishings, supplies and services	72.57	34.69	32.30	65.24
Health	38.56	22.01	11.51	50.39
Transportation	147.75	43.35	55.33	83.73
Communication	23.85	10.20	18.44	14.36
Recreation	108.80	35.13	42.71	94.89

Education	22.61	0.30	9.08	0.95
Miscellaneous(a)	114.16	23.45	36.74	38.42
Total	900.97	326.18	443.34	564.05
Number of households ('000)	4,042.0	1,035.4	958.1	361.1
Persons/household (no)	2.94	1.55	2.67	1.58

(a) Includes interest charges and general insurance.

In constructing price indexes, it is not the absolute expenditure levels but rather the expenditure shares (or weights) that matter. Table 3 presents the same data in expenditure share (or weight) form.

**TABLE 3: EXPENDITURE WEIGHTS BY MAJOR COMMODITY GROUP AND HOUSEHOLD TYPE
AT JUNE QUARTER 2000 PRICES**

Commodity group	Household type			
	Employee households	Age Pensioner households	Other government transfer recipient households	Self-funded retiree households
Proportion of total expenditure (%)				
Food	17.22	21.97	20.82	17.11
Alcohol and tobacco	8.25	6.73	8.75	6.19
Clothing and footwear	5.21	4.30	4.02	4.19
Housing	10.69	15.14	19.92	10.81
Household furnishings, supplies and services	8.05	10.64	7.28	11.57
Health	4.28	6.75	2.60	8.93
Transportation	16.40	13.29	12.48	14.84
Communication	2.65	3.13	4.16	2.55
Recreation	12.08	10.77	9.63	16.82
Education	2.51	0.09	2.05	0.17
Miscellaneous(a)	12.67	7.19	8.29	6.81
Total	100.00	100.00	100.00	100.00

(a) Includes interest charges and general insurance.

Figures may not add due to rounding.

There are some notable differences in the expenditure weights across the household types. For example the proportion of expenditure allocated to Food is highest for Age pensioner households, closely followed by Other government transfer recipient households. Employee households allocate a higher proportion of their expenditures to Transportation, Education and Miscellaneous (which includes interest charges) than the other household groups. Other government transfer recipients allocate higher proportions of their expenditures to Housing, Alcohol and tobacco and Communication than the other household types. Self-funded retiree households allocate higher proportions of their expenditures to Household furnishings and supplies, Health and Recreation than the other household types.

Further insight into the differences in expenditure patterns is provided in table 4. This table shows weights at the equivalent of the 14th series CPI expenditure class level for those expenditure classes where the differences in weights are most pronounced. The differences between household types again highlight demographic and other differences, some of which have been noted above.

**TABLE 4: EXPENDITURE WEIGHTS FOR SELECTED EXPENDITURE CLASSES
AT JUNE QUARTER 2000 PRICES**

Expenditure class	Household type				CPI
	Employee households	Age pensioner households	Other government transfer recipient households	Self-funded retiree households	
Proportion of total expenditure (%)					
Rents	5.09	4.43	13.71	0.26	5.60
Interest charges(a)	6.55	0.47	2.83	0.18	na
Hospital and medical services	2.45	3.77	0.96	6.18	2.71
Domestic holiday travel and accommodation	2.36	3.10	1.28	5.34	2.40
Tobacco	2.43	2.40	5.29	1.49	2.27
Motor vehicles	6.44	4.30	3.50	6.15	5.85
House repairs and maintenance	1.56	3.22	1.18	3.88	1.85
Overseas holiday travel and accommodation	1.63	1.37	0.91	3.25	1.95
House purchase(b)	na	na	na	na	7.86

(a) Not included in the CPI.

(b) Not included in the living cost indexes.

When comparing differences in the behaviour of the aggregate indexes, the role played by differences in weights increases as the dispersion in the rates of price change increases. Over the period for which these indexes have been compiled there is substantial dispersion in the price movements of the expenditure classes. For example the CPI index for Hospital and medical services declined by 2.2% between the June quarter 1998 and the June quarter 2002 while the index for Tobacco increased by 43.0% and the index for Overseas holiday travel and accommodation increased by 24.7% over the same period.

RESULTS

The index series for the various household types from June quarter 1998 to June quarter 2002 are shown in chart 1 and quarterly percentage changes in the indexes in chart 2. The data on which the charts are based are provided in table 5.

Over the four-year period the indexes indicate there have been some differences in changes in living costs among the household types, with Employee households experiencing the lowest increase of 12.4% and Age pensioner households the highest increase of 14.0%. These outcomes compare with the increase in the CPI over the period of 13.7%.

TABLE 5: LIVING COST INDEXES AND THE CPI

Quarter	Living cost indexes(a)				CPI(b)	CPI(c)
	Employee households	Age pensioner households	Other government transfer recipient households	Self-funded retiree households		
Index numbers						
1998						
June	100.0	100.0	100.0	100.0	121.0	100.0
September	100.3	100.5	100.4	100.3	121.3	100.2
December	100.6	100.9	100.8	100.7	121.9	100.7
1999						

March	100.3	100.8	100.9	100.0	121.8	100.7
June	100.7	101.2	101.4	100.4	122.3	101.1
September	101.5	102.0	102.1	101.4	123.4	102.0
December	101.9	102.4	102.7	101.8	124.1	102.6
2000						
March	103.0	103.4	103.9	102.4	125.2	103.5
June	104.1	104.1	104.8	103.2	126.2	104.3
September	107.9	107.8	108.1	107.2	130.9	108.2
December	108.5	108.2	108.7	107.4	131.3	108.5
2001						
March	109.7	109.7	110.2	108.5	132.7	109.7
June	110.0	110.5	111	109.4	133.8	110.6
September	110.2	110.9	111.1	109.7	134.2	110.9
December	110.8	112.3	112	111.1	135.4	111.9
2002						
March	111.8	113.5	113.0	112.2	136.6	112.9
June	112.4	114.0	113.5	113.0	137.6	113.7

% change from corresponding quarter of previous year

1999						
June	0.7	1.2	1.4	0.4	1.1	na
September	1.2	1.5	1.7	1.1	1.7	
December	1.3	1.5	1.9	1.1	1.8	
2000						
March	2.7	2.6	3.0	2.4	2.8	
June	3.4	2.9	3.4	2.8	3.2	
September	6.3	5.7	5.9	5.7	6.1	
December	6.5	5.7	5.8	5.5	5.8	
2001						
March	6.5	6.1	6.1	6.0	6.0	
June	5.7	6.1	5.9	6.0	6.0	
September	2.1	2.9	2.8	2.3	2.5	
December	2.1	3.8	3.0	3.4	3.1	
2002						
March	1.9	3.5	2.5	3.4	2.9	
June	2.2	3.2	2.3	3.3	2.8	

% change from previous quarter

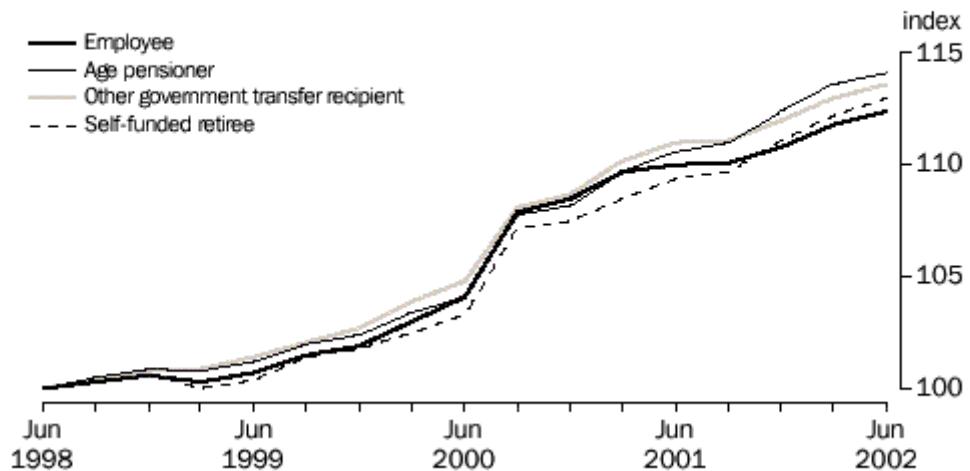
1998						
September	0.3	0.5	0.4	0.3	0.2	na
December	0.3	0.4	0.4	0.4	0.5	
1999						
March	-0.3	-0.1	0.1	-0.7	-0.1	
June	0.4	0.4	1.0	0.4	0.4	
September	0.8	0.8	0.7	1.0	0.9	
December	0.4	0.4	0.6	0.4	0.6	
2000						
March	1.1	1.0	1.2	0.6	0.9	
June	1.1	0.7	0.9	0.8	0.8	
September	3.7	3.6	3.1	3.9	3.7	
December	0.6	0.4	0.6	0.2	0.3	
2001						
March	1.1	1.4	1.4	1.0	1.1	
June	0.3	0.7	0.7	0.8	0.8	
September	0.2	0.4	0.1	0.3	0.3	
December	0.5	1.3	0.8	1.3	0.9	
2002						
March	0.9	1.1	0.9	1.0	0.9	
June	0.5	0.4	0.4	0.7	0.7	

(a) Base of each index: June quarter 1998 = 100.0.

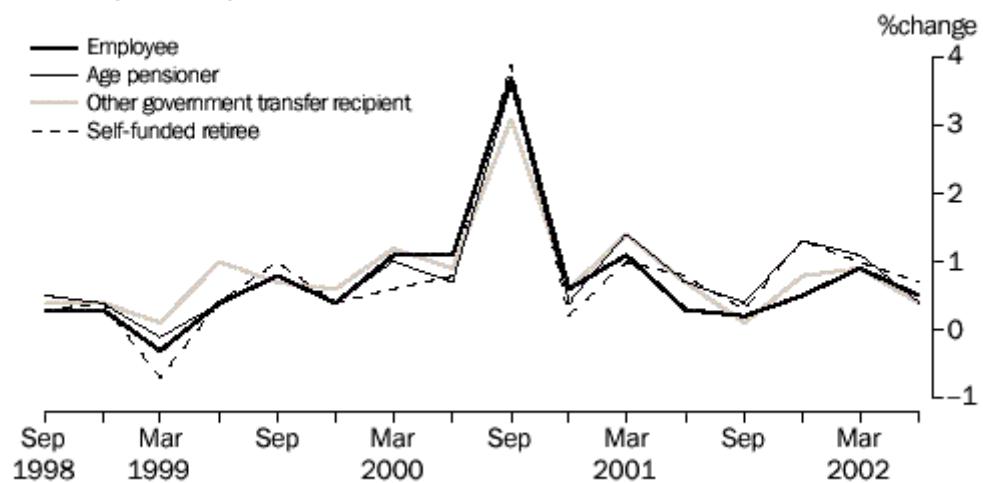
(b) As published, base 1989-90 = 100.0.

(c) CPI re-referenced to base of June quarter 1998 = 100.0 to facilitate longer-term comparisons with living cost indexes.

**1 INDEX NUMBERS BY HOUSEHOLD TYPE,
June quarter 1998 = 100.0**



**2 PERCENTAGE CHANGE,
(from previous quarter)**



The index results up to December quarter 2000 are very similar to those previously published. Up to that time Self-funded retiree households had shown the lowest increase in living costs and Other government transfer recipients the highest. Since December quarter 2000 some differences have continued to occur in the living cost experiences of the household types. Between December 2000 and June 2002, Employee households experienced the lowest rate of increase in living costs and Age pensioner households the highest rate. Changes in the price indexes at the CPI equivalent of the group level are presented in table 6 along with corresponding data for the CPI.

Differences in the price experiences of household types at the commodity group level reflect differences in expenditure weights at the lower levels, differences in weights at the state level³ and differences in prices faced by some household types. Some of these impacts are discussed below.

Between December quarter 2000 and June quarter 2002, the most noticeable variation in the living cost indexes was recorded for the Miscellaneous expenditure group. This commodity group

includes interest charges and insurance. The reductions in interest rates on both home loans and consumer credit in conjunction with the greater weight interest charges have in the expenditures of Employee households, resulted in an overall fall of 4.1% in the index for Miscellaneous for these households. On the other hand, as Age pensioner and Self-funded retirees had little expenditure on interest charges, the rise in insurance prices delivered a significant overall increase in prices for this commodity group for both these household types.

**TABLE 6: CHANGE IN LIVING COST INDEXES BY COMMODITY GROUP,
DECEMBER QUARTER 2000 TO JUNE QUARTER 2002**

Commodity group	Living cost indexes				CPI
	Employee households	Age Pensioner households	Other government transfer recipient households	Self-funded retiree households	
Percentage change					
Food	7.7	8.9	8.3	8.5	7.6
Alcohol and tobacco	6.6	7.0	8.9	6.3	6.7
Clothing and footwear	0.2	0.8	0.3	0.6	0.5
Housing(a)	4.6	4.7	4.2	4.6	4.2
Household furnishings, supplies and services	3.4	3.5	3.2	3.7	3.4
Health	8.6	9.6	10.1	7.6	8.6
Transportation	2.1	1.6	0.8	2.2	2.1
Communication	1.7	-1.0	-1.6	-2.8	1.3
Recreation	4.8	5.3	4.5	5.7	5.2
Education	9.4	7.7	8.4	7.9	9.1
Miscellaneous(b)	-4.1	6.6	-0.5	7.1	5.2
Total	3.6	5.4	4.4	5.2	4.8

(a) House purchases are included in the CPI but excluded from the living cost indexes.

(b) Includes interest charges and general insurance. Interest charges are excluded from the CPI and general insurance is calculated on a different basis.

Age pensioner households experienced a larger increase in Food prices than the other household types. This largely reflected substantial price rises for meat and fruit compared with other food items such as take away and restaurant meals over this period.

Other government transfer recipient households experienced the highest increase in Alcohol and tobacco prices, reflecting their greater relative expenditure on tobacco products, which recorded much higher price increases than alcohol.

The higher increase in Recreation prices experienced by Self-funded retiree households in part reflects their greater relative expenditure on overseas travel and accommodation, with an increase in such prices of around 20% over this period.

In compiling the CPI, concession prices have been identified for those products for which they are considered important. In turn, these have been incorporated into the living cost indexes where appropriate, for each household type. The concession prices take various forms, such as a specified dollar reduction off the normal price (a practice often followed for local government rates) or a separately specified price. The practices of setting and adjusting these concession prices vary, and government policies may extend or reduce access to such concessions. As a result, changes in these prices can differ in their timing and magnitude to non-concession prices.

Differences in the movement of concessional prices compared to their non-concessional equivalents, can result in different household types experiencing different overall rates of price

change. For example changes to concession phone call prices and the extension of the telephone line rental subsidy to Self-funded retiree households who qualify for a Commonwealth Seniors Health Card from September quarter 2001 contributed to the variation in price movements for Communications. In addition, concession priced local government rates and charges also showed a higher rise over this period than non-concession prices.

CONCLUSIONS

These analytical indexes have been designed specifically to answer the question:

"By how much would after tax money incomes need to change to allow households to purchase the same quantity of consumer goods and services as purchased in the base period?"

In the earlier study covering the period June 1998 to December quarter 2000 it was concluded that the answer would appear to be broadly similar across the different household types. However, it was also noted that the results would not necessarily hold over all time periods.

The extension of the analysis to June quarter 2002 is generally consistent with those earlier conclusions, although perceptions as to what are significant differences may vary between analysts. Further, with the CPI recording an increase of 13.7% over the same period, it could be argued that the CPI provides a reasonable estimate of changes in living costs for each of the selected household types over this period.

Again it is cautioned that these indexes have been constructed to reflect the experiences of population groups as a whole, and they may not reflect the experiences of any individual household. In this regard it is particularly important to note that no such index can be expected to reflect the changes in living costs experienced by households as a direct consequence of their moving through the life cycle (e.g. as a result of family formation and ageing). However, it would be reasonable to say that these indexes do provide reliable estimates of the change in living costs of households at an equivalent point in the life cycle during each period.

FURTHER INFORMATION

For more information about Analytical living cost indexes, contact Bill Ferris on (02) 6252 6074 or email <bill.ferris@abs.gov.au>.

APPENDIX

The living cost indexes have been constructed by the ABS to meet a perceived requirement for this type of index. Details of the conceptual basis of the index and method of construction are provided in AEI June 2001.

LIVING COST OR INFLATION INDEXES

In brief, a living cost index is designed to assess changes over time in the after tax incomes of households. Therefore it is concerned with measuring the changes in the out-of-pocket expenses incurred by households to gain access to consumer goods and services. The item coverage of such an index is determined by reference to the actual money outlays of households on all but investment items.

In defining the item coverage of an inflation index such as the CPI, the starting point is the view that inflation is a phenomenon peculiar to the operation of markets. The item coverage is then defined as all those goods and services actually acquired by households in monetary transactions.

The most notable practical differences between the two types of indexes is that living cost indexes include interest charges but exclude house purchases, while inflation indexes exclude interest charges but include house purchases.

Insurance (other than health insurance) is also treated differently. In living cost indexes, the weight relates to the gross value of insurance premiums paid by households. In an inflation index, the weight relates to the net value of the service provided by the insurance company (in simple terms, the amount of premiums paid by households less the amounts reimbursed by way of claims).

HOUSEHOLD TYPES

In determining the household types for which these indexes would be produced, the ABS concluded that principal source of income⁴ represented the best means of defining household types for the purpose of measuring changes in living costs. The four household types for which these indexes have been constructed are:

- Employee households (i.e. those households whose principal source of income is from wages and salaries);
- Age pensioner households (i.e. those households whose principal source of income is the age pension or veterans affairs pension);
- Other government transfer recipient households (i.e. those households whose principal source of income is a government pension or benefit other than the age pension or veterans affairs pension) and,
- Self-funded retiree households (i.e. those households where the Household Expenditure Survey (HES) defined reference person is 'retired' (not in the labour force and 55 years of age or over) and whose principal source of income is superannuation or property income).

The indexes for the selected household types have been produced only at the national level, although the CPI is produced for each capital city. For at least some household types the sample sizes in the HES are too small to produce reliable estimates of expenditure at the capital city level.

ENDNOTES

1 'Analytical Living cost Indexes for Selected Australian Household Types', Australian Economic Indicators, June 2002 cat. no. 1350.0

2 See Appendix for a discussion of the conceptual and methodological issues relevant to the construction of the measures.

3 The CPI is compiled from price indexes at the capital city level using expenditures by the CPI population in those cities as weights. The state/territory expenditure weights for the living cost indexes have been derived by applying national average expenditure estimates by household type to the estimated number of households in each state/territory.

territory.

4 A household's principal source of income is defined as that income source which accounts for the largest proportion of total income. It is not necessary that the principal source accounts for a majority of household income. For example, if a household's income is sourced 40% from wages and salaries, 35% from property income and 25% from an age pension, it would be classified as an Employee household.

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